

Remarks

Claims 14-23 and 25-37 are pending in the application, with claims 14 and 29 being the independent claims. Claims 1-13 and 24 have been previously canceled.

Based on the present Amendment and the following Remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Claim Objections

Claims 14 and 29 have been amended as suggested by the Examiner.

Rejections under 35 U.S.C. § 103

Claims 14-15, 28 and 30 are rejected under 35 U.S.C. §103(a) as being unpatentable over "Correction algorithms in a laser scanning dimension measurement system", Pages 57-60, IEE Proceedings-A, Vol. 139, No. 2, March 1992 to Chang et al. ("Chang").

Chang discloses an emitter unit, a receiver unit and an electronic analyzing system. As noted by the Examiner, Chang does not disclose a dark field stop, as recited by claim 14. In this context, the Action argues that it would have been obvious to a person having ordinary skill in the art to provide a dark field stop "for the purpose of preventing directly reflected near specular laser light and any light diffused by optical components from reaching the photodetector and a beam splitter for the purpose of redirecting the light beam." However, it is respectfully submitted that this motivation is not supported by the prior art, particularly the prior art cited in the Action.

The main purpose of a dark field stop is to block the central laser path, i.e. the direct laser beam, and not to block of light propagating near the axis of the laser beam. For the purpose and motivation cited in the Action, the skilled person would use a diaphragm which has the opposite effect of a dark field stop.

Referring specifically to Chang, the laser scanner disclosed therein comprises only one single photodiode in the receiver module (see figure 1) which outputs a constant (high) voltage if the laser scans a region without the object and which outputs a low voltage if the object interrupts the scanning laser beam. The time period of this low voltage output signal is measured, and in correlation with the scanning speed of the laser beam, the dimension of the object can be calculated (see page 58, second paragraph). Figure 4 of Chang shows such a typical electrical output signal of the photodetector. The use of a dark field stop blocking the direct laser beam in the laser scanner of Chang would result in a very different output signal from that measured.

The motivation for the use of such dark field stop in the present invention is to make use of the diffraction of the limiting rays on the object edges which rays are detected with such a dark field stop resulting in an increased signal (voltage) and which are only slightly influenced by variations in the laser output and the laser intensity. In contrast, Chang discloses a different signal output and does suggest such a motivation for the use of a dark field stop. The use of a dark field stop in the laser scanner of Chang therefore can not be obvious for the skilled person. In fact, as discussed in the previous paragraph, a dark field would interfere with the operation of Chang, which is evidence of non-obviousness.

Claims 18-27 and 34-37 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chang in view of U.S. Patent No. 5,691,839 to Kobayashi ("Kobayashi").

Claims 18-27 depend from claim 14. Kobayashi fails to cure the deficiency of the rejection of claim 14 as discussed above. As such, claims 18-27 are allowable as depending from an allowable claim. Claims 34-37 depend from claim 29. Kobayashi fails to cure the deficiency of the rejection of claim 29 as discussed above. As such, claims 34-37 are allowable as depending from an allowable claim.

Furthermore, there is no motivation for the proposed combination. Chang is directed to a laser scanning dimension measurement system for online measurement of moving and vibrating object such a tubes, wires and cables i.e. for measuring macroscopic geometric dimensions of such

an object. On the other hand Kobayashi discloses a laser scanning optical microscope, i.e. refers to a technical field with quite different problems, objects and dimensions. The skilled person in the field of measuring systems for measuring macroscopic dimensions of objects would clearly not look for solutions of arising problems in the field of microscopes.

Claims 16-17 and 31-33 are rejected under 35 §U.S.C. 103(a) as being unpatentable over Chang in view of U.S. Patent No. 4,432,648 to Musto et al. ("Musto").

Claims 16-17 depend from claim 14. Musto fails to cure the deficiency of the rejection of claim 14 discussed above. As such, claims 16-17 are allowable as depending from an allowable claim.

Rejection under 35 U.S.C. § 102

Claim 29 is rejected under 35 U.S.C. §102(b) as being anticipated by Chang.

Claim 29 recites a photodiode array or a position restoring photo diode. Chang does not disclose a photodiode array or a position restoring photodiode. Chang discloses a single photodiode, and moreover, because of the measuring principle involved, Chang would not utilize an array or a position restoring diode.

As such, Chang does not anticipate claim 29.

All of the stated grounds of objections and rejections have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

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Reply to Office Action of June 18, 2003

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

A Notice of Allowance with claims 14-23 and 25-37 is respectfully requested.

Respectfully submitted,

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